

## **REMARKS**

The amendments to the claims find support in the specification and claims as originally filed. For example, the amendments to Claims 1, 5, 14 and 17 stating that only one of the heterobifunctional spacer functional groups comprises a soft base find support in the specification as filed at page 7, lines 4-9, particularly lines 4-5, and elsewhere in the specification. The amendment to Claim 11 find supports at page 7, lines 5-7, and elsewhere in the specification as filed. The amendments to Claims 12 and 13 amend the claim language to be in accordance with the language of previously presented Claims 4 and 8. The amendments to Claims 14 and 17 find support in the specification, for example, at page 7, lines 4-9, particularly lines 4-5, and lines 22-28; at page 14, lines 1-2; and elsewhere in the specification.

No new matter is added by the claim amendments.

The claim amendments are believed to place the claims in form for allowance or in better form for appeal. All elements of the pending amended claims have been before the Examiner and subject to examination. The claim amendments are believed to make grammatical corrections to more clearly point out the subject matter of the invention. The present amendments now include some elements of dependent claims into the independent claims, and more clearly specify the required elements of the claims.

The amended claims now make clear that, for example, the heterobifunctional spacer of the invention of Claims 1-13 have only one soft base functional group selected from the group succinimidyl-6-(biotinamido)hexanoate or succinimidyl 6-[6-(((iodoacetyl)amino)-hexanoyl)amino]hexanoate. The elements of this group have been examined in previous claims, and were previously in Claim 1 or have been included in Claim 1 from dependent Claims 4, 8, 12 and 13. It is believed that the present amended claims do not require a new search, since all claim elements have already been before the Examiner and subject to search.

Claims 14-21 as amended more clearly state that the heterobifunctional spacer of the invention has two functional groups, one comprising a soft base functional group and the other comprising an N-hydroxy succinimide ester. All elements of amended

Claims 14-21 were present in prior versions of the claims (although three soft base elements have been canceled in the present amendments to Claims 14-21), and these prior versions of the claims have been searched and examined.

Entry of the claim amendments is respectfully requested.

Applicants acknowledge the withdrawal of the following rejections: the rejections of Claims 1 and 5 under 35 U.S.C. §112, second paragraph, as allegedly indefinite; the rejections of Claims 14-21 under 35 U.S.C. §102(b) as allegedly being anticipated by Eigler et al. (U.S. Patent No. 5,077,210); and the provisional rejections of Claims 1-11 and 14-21 under the judicially created doctrine of obviousness double-patenting over Claims 1-11 of co-pending U.S. Patent Application Serial No. 10/333,697.

Claims 1-21 are pending in the application. Claims 1-21 stand rejected under 35 U.S.C. §112, second paragraph; Claims 1-3, 5-7, 9-11, and 14-20 rejected as allegedly anticipated under 35 U.S.C. §102(b) over Siiman et al., U.S. Patent No. 5,248,772 (hereafter "Siiman"); and Claims 14-21 stand rejected under 35 U.S.C. §102(e) as allegedly anticipated by Tarlov et al., U.S. Patent No. 5,942,397 (hereafter "Tarlov").

Applicants respectfully traverse these claim rejections.

#### **The Rejections of Claims 1 and 5 Under 35 U.S.C. §112, Second Paragraph**

Claims 1-21 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner alleges that the Claim 1 is indefinite as allegedly reading on "a heterobifunctional spacer having at least two functional groups, both of the said functional groups being selected from the category of a soft base" (Office action dated May 23, 2005, page 3, lines 4-5). Claims 2-13 are said to be indefinite by way of their dependency from Claim 1.

However, as amended, Claim 1 is directed to "a heterobifunctional spacer having at least two functional groups, only one of said functional groups comprising a soft base." Thus, Claim 1 does not read on a heterobifunctional spacer having two soft base functional groups, as suggested by the Examiner, and is thus not indefinite. Similarly, Claims 2-13 are not indefinite in their dependence from Claim 1.

Claim 11 is alleged to be indefinite for reciting the phrase "[a] surface of Claim 1 further comprising an oligonucleotide," the Examiner alleging that it is unclear "whether said oligonucleotide is bonded to the heterobifunctional spacer or a soft metal solid support." As amended, Claim 11 recites "an oligonucleotide linked to said heterobifunctional spacer," and so makes clear that the oligonucleotide is bonded to the heterobifunctional spacer.

Claims 14 and 17 are allegedly indefinite for reciting the phrase "a heterobifunctional spacer having at least two functional groups, said functional groups including a soft base and an N-hydroxy succinimide ester," the Examiner suggesting that it is unclear whether the two functional groups of the heterobifunctional spacer are both soft bases, or from one of each group. As amended, both Claim 14 and Claim 17 recite "said spacer having two functional groups, only one of said functional groups comprising a soft base and the other of said functional groups comprising an N-hydroxy succinimide ester." Thus, Claims 14 and 17 do not read on heterobifunctional spacers having two soft base functional groups, and are not indefinite. Similarly, Claims 15, 16, 20, and 21 are not indefinite by way of their dependency from Claim 14, and Claims 18 and 19 are not indefinite by way of their dependency from Claim 17.

Accordingly, Applicant respectfully submits that the rejections of Claims 1-21 under 35 U.S.C. §112, second paragraph, are overcome.

#### **The Rejections of Claims 1-3, 5-7, 9-11, and 14-20 Under 35 U.S.C. §102(b)**

Claims 1-3, 5-7, 9-11, and 14-20 rejected as allegedly anticipated under 35 U.S.C. §102(b) over Siiman et al., U.S. Patent No. 5,248, 772 (hereafter "Siiman").

Anticipation under 35 U.S.C. §102 requires that "every element of the claimed invention be identically shown in a single reference." (*In re Bond*, 910 F.2d 831,832 (Fed. Cir. 1990)). Applicant respectfully submits that Siiman fails to disclose every element of the claimed invention, and thus fails to anticipate Claims 1-3, 5-7, 9-11, and 14-20.

Siiman is cited as discussing N-succinimidyl-(4-iodoacetyl-)aminobenzoate (SIAB) as a soft-base and suggests that Siiman anticipates the present invention where SIAB may be a heterobifunctional spacer. However, Claim 1 requires that only one of

the functional groups of the heterobifunctional spacer comprise a soft base; and that the soft base be either succinimidyl-6-(biotinamido)hexanoate or succinimidyl 6-[6-(((iodoacetyl)amino)-hexanoyl)amino]hexanoate. SIAB being a soft base and not being either succinimidyl-6-(biotinamido)hexanoate or succinimidyl 6-[6-(((iodoacetyl)amino)-hexanoyl)amino]hexanoate, SIAB is not a possible element of the claimed heterobifunctional spacers. Moreover, Siiman fails to discuss a heterobifunctional spacer having either succinimidyl-6-(biotinamido)hexanoate or succinimidyl 6-[6-(((iodoacetyl)amino)-hexanoyl)amino]hexanoate as a soft base functional group, and so does not discuss at least these elements of the claimed invention.

Siiman also fails to anticipate Claims 14-20, which require that one of two functional groups of the heterobifunctional spacer be a soft base selected from the group consisting of RSH,  $RS^-$ ,  $R_2S$ , RSSR,  $CN^-$ ,  $S_2O_3^{2-}$ ,  $R_3P$ , and  $(RO)_3P$ , where R is an organic group. SIAB does not have a soft base selected from the group consisting of RSH,  $RS^-$ ,  $R_2S$ , RSSR,  $CN^-$ ,  $S_2O_3^{2-}$ ,  $R_3P$ , and  $(RO)_3P$ , where R is an organic group. Thus, SIAB is not an element of the claimed invention, and Siiman, lacking disclosure of a soft base selected from the group consisting of RSH,  $RS^-$ ,  $R_2S$ , RSSR,  $CN^-$ ,  $S_2O_3^{2-}$ ,  $R_3P$ , and  $(RO)_3P$ , where R is an organic group, does not anticipate the present invention.

Accordingly, Siiman lacking elements of the claimed invention, Applicants respectfully submit that Claims 1-3, 5-7, 9-11, and 14-20 are not anticipated by Siiman, and that the rejections of Claims 1-3, 5-7, 9-11, and 14-20 under 35 U.S.C. §102(b) are overcome.

### **The Rejections of Claims 14-21 under 35 U.S.C. §102(e)**

Claims 14-21 stand rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Tarlov et al., U.S. Patent No. 5,942,397 (hereafter "Tarlov").

Claims 14-21 require, among other elements, a heterobifunctional spacer having a functional group comprising an N-hydroxy succinimide ester. However, Tarlov nowhere discusses N-hydroxy succinimide esters, nor heterobifunctional spacer having a functional group comprising an N-hydroxy succinimide ester. Lacking at least these elements, Tarlov fails to anticipate the claimed invention.

Accordingly, Tarlov lacking elements of the claimed invention, Applicants respectfully submit that Claims 14-21 are not anticipated by Tarlov, and that the rejections of Claims 14-21 under 35 U.S.C. §102(e) are overcome.

### **CONCLUSION**

Applicants respectfully request entry of the claim amendments and reconsideration and allowance of all pending claims. Applicants submit that the amendments comply with requirements of form made in the final Office Action dated May 23, 2005, place the pending claims in better form for consideration or in better form for appeal. Applicants further submit that the amended claims are in allowable form, and that entry of the amendments does not require a new search. Early notification of the allowance of the application is respectfully requested.

The Examiner is invited to contact the undersigned attorney at the telephone number indicated below should he find that there are any further issues outstanding.

Please charge any fees, including fees for extension of time, or credit overpayment to Deposit Account No. **08-1641**, referencing Attorney's Docket No. **25527-0001 C1**.

Respectfully submitted,

Dated: July 22, 2005

By:



James A. Fox, Ph.D. (Reg. No. 38,455)

**HELLER EHRMAN LLP**  
275 Middlefield Road  
Menlo Park, California 94025-3506  
Telephone: (650) 324-7000  
Facsimile: (650) 324-0638

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7/22/05 2:16 PM (25527.0001)